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The Path to Sustainable Energy For All: Biofuels Production and Food Security in Tanzania

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The biofuel production initiatives in Tanzania are at an infant stage and may jeopardise smallholders farmers' initiatives to address the issue of their food security. Expectations from prospective biofuel developers indicate that much land should be allocated to the biofuel industry. The result of which might compromise food production. Therefore any adoption of biofuel production in Tanzania requires sound policies.

The world is faced with challenges of achieving sustainable energy for all. One of the objectives to the philosophy is to increase the use of renewables. Biofuels are among the renewable energy resources considered to be very important in addressing energy security problems, poverty reduction, decreasing the dependency on fossil fuels and addressing environmental issues. Brazil e.g. set the target that diesel used in the transportation sector should contain 2% biodiesel (a product of biofuel) by 2008, and 5% by 2013. The EU member states set a target of incorporating 5.75% of biofuels in the total fuels used for transportation by 2010. African countries are faced with similar challenges. Different efforts were taken but until now the biofuels production is still at its infant stage and there is virtually neither commercial biofuel production nor biofuel policy in Tanzania. Similarly, African countries, especially the sub-Saharan ones, are still at the stage of developing biofuel policies.

There exist different key challenges in Tanzania that could significantly hinder biofuels development such as food security, land sovereignty and the overall biofuel project viability in terms of replacing the current petroleum products. Land is a limited resource, and thus crops for both human food and biofuel production stand to compete for this scarce resource.

The genesis of the concern

Agriculture in Tanzania is dominated by smallholder farmers (peasants) cultivating an average farm size of between 0.9 hectares and 3.0 hectares each. About 70% of Tanzania's crop area is cultivated by hand hoe, 20% by ox plough and 10% by tractor. The major constraint facing the agriculture sector are the falling labour and land productivity due to application of poor technology as well as dependence on unreliable and irregular weather conditions. Moreover millions of Tanzania's smallholder farmers living in the rural are poor with limited access to inputs, appropriate technology, extension services with undeveloped infrastructure and marketing systems. Tanzania is one of the countries in sub-Saharan Africa classified by the Food and Agriculture Organization of the United Nations (FAO) as being very vulnerable to food insecurity. The economy heavily depends on agriculture, which accounts for more than one quarter of GDP.

Due to abundance of land, many biofuel investors have shown interest in the country. If a substantial amount of land is used for biofuels production, Tanzania can produce enough biofuels to meet its fuels need and excess for export.

Status

Biofuels production in Tanzania is just beginning to be established. Several foreign companies have applied for biofuels production and have acquired land for planting biofuel crops. The country has been engaged in different projects to produce biofuel and a number of multinational companies, Non-Governmental Organizations (NGOs) and smallholder farmers are implementing a number of projects aimed at increasing the supply of liquid biofuels. Due to a lack of policy to guide the biofuel production, most of the energy projects in the country are situated on land that is suitable for food production – this is likely to make the country vulnerable to food insecurity. Tanzania has experienced shortages in the supply of food in the past which often resulted in the distribution of food aid. Production of biofuels may adversely affect food availability if food crops or productive resources (land, labour, water, etc) are switched from the production of food to that of biofuels, as discussed hereunder:

(i) Land

It has been argued that converting land that is suitable for growing food to the production of biofuel crops may compromise food security as land and time for producing food crops will be reduced.

(ii) Labour

Also evidence is in the record that villagers are losing their land to investors of biofuels for the promise of beeing employed – but latter remain landless, jobless and in despair for the future. When the value for labour in the plantation is higher than in their own farms, people tend to sell their manpower and forfeit cultivating food crops for their own consumption; with the risk of an increased food shortage and more dependency to the investors. This calls for care when related contracts are drawn.

(iii) Water

The cultivation of biofuel crops may involve the use of nitrogen, pesticides and even herbicides which are likely to affect water resources – particularly when irrigation is used. If biofuels lead to a scarcity or the pollution of water resources, there is likely to be an adverse impact on the utilisation of food. In some cases areas allocated for biofuel production are adjacent to rivers which smallholder farmers also depend on because the water is used to irrigate food crops during the dry season. This may lead to conflicts over access to water and could also reduce food production during the dry season.

(iv) Food prices and technology

As most of the farmers in Tanzania are smallholders they depend on rain and subsidized fertilizer which is not always forthcoming. Furthermore, their farming is often purely based on experience and technology is poor. All these facts lead to a small quantity and quality of products which in most cases cannot meet market requirements. The situation is likely to worsen if the smallholder farmers start to diverte land for biofuel production. As certain biofuel feedstocks are also used as food and/or animal feed an increase in biofuel production may also directly impact the supply and/or consumer prices of agricultural products and meat.

Conclusion

The improvement of food security is one of the key policy objectives of the agricultural sector in Tanzania. The government should promote both – food and fuel production in Tanzania. But it is important to ensure that future biofuel production does not compromise food production by drawing relevant policies to the effect. Furthermore policy formulation should be flexible as uncertainties always exist. Moreover, the government should offer greater support to local investors in the biofuels sector, who are predominantly small-scale farmers. Thus, they enhance the value addition of biofuels and create a sustainable income and employment possibility.

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* The paper expresses the personal opinions of the author and does not necessarily reflect the views of his employer or the publisher

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